

WHAT IS CLAIMED IS

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1. An integrated circuit for supplying power, comprising:

an IC chip having a rectangular shape and having a first edge and a second edge opposite the  
10 first edge;

a switching regulator implemented on said IC chip and having a driver transistor whose ON time of switching is controlled to adjust an output voltage of said switching regulator; and

15 a series regulator implemented on said IC chip, wherein said driver transistor of said switching regulator is positioned near the first edge, and said series regulator is positioned near the second edge.

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2. The integrated circuit as claimed in  
25 claim 1, wherein said series regulator includes a

driver transistor whose conductivity of an ON state is controlled to adjust an output voltage of said series regulator.

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3. The integrated circuit as claimed in claim 1, wherein said series regulator supplies  
10 power to a high-frequency circuit.

15 4. The integrated circuit as claimed in claim 1, wherein said switching regulator and said series regulator receive a positive power supply voltage through respective different pads.

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5. The integrated circuit as claimed in claim 1, wherein said switching regulator and said  
25 series regulator receive a negative power supply

voltage through respective different pads.

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6. The integrated circuit as claimed in claim 1, further comprising additional circuitry situated between said driver transistor of said switching regulator and said series regulator.

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7. The integrated circuit as claimed in claim 1, wherein said driver transistor of said switching regulator and said series regulator are positioned near opposite corners of said IC chip.

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8. The integrated circuit as claimed in claim 1, wherein said driver transistor of said switching regulator and said series regulator are positioned near a diagonal line of said IC chip.

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5                   9. The integrated circuit as claimed in  
claim 1, wherein said switching regulator functions  
as a DC-DC converter of a synchronous detection type.

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                  10. A communication apparatus, comprising:  
                  an IC chip having a rectangular shape and  
                  having a first edge and a second edge opposite the  
15 first edge;

                  a switching regulator implemented on said  
IC chip and having a driver transistor whose ON time  
of switching is controlled to adjust an output  
voltage of said switching regulator;

20                   a series regulator implemented on said IC  
chip, wherein said driver transistor of said  
switching regulator is positioned near the first  
edge, and said series regulator is positioned near  
the second edge; and

25                   a RF circuit unit including a transceiver

for radio communication.

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11. The communication apparatus as claimed in claim 10, wherein said series regulator supplies power to said RF circuit.

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12. The communication apparatus as claimed in claim 10, wherein said switching regulator and said series regulator receive a positive power supply voltage through respective different pads.

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13. The communication apparatus as claimed in claim 10, wherein said switching regulator and said series regulator receive a negative power supply voltage through respective different pads.

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14. The communication apparatus as claimed  
5 in claim 10, further comprising additional circuitry  
situated between said driver transistor of said  
switching regulator and said series regulator.

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15. The communication apparatus as claimed  
in claim 10, wherein said driver transistor of said  
switching regulator and said series regulator are  
15 positioned near opposite corners of said IC chip.

20 16. The communication apparatus as claimed  
in claim 10, wherein said driver transistor of said  
switching regulator and said series regulator are  
positioned near a diagonal line of said IC chip.

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17. The communication apparatus as claimed  
in claim 10, wherein said switching regulator  
5 functions as a DC-DC converter of a synchronous  
detection type.